

PROJECT: _____ DESCRIPTION: _____ _____	Prepared by/Date: _____ / _____ Checked by/Date: _____ / _____ Sheet _____ of _____
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Definition Sketch:

$Q_{TOTAL}$  \_\_\_\_\_ Soil Characteristics:  
 $Q_{MC}$  \_\_\_\_\_  $D_{15}$  \_\_\_\_\_  
 $Q_{LB}$  \_\_\_\_\_  $D_{50}$  \_\_\_\_\_  
 $Q_{RB}$  \_\_\_\_\_  $D_{85}$  \_\_\_\_\_

DEPTH OR W.S. (m) (1)	A (m <sup>2</sup> ) (2)	V <sub>g</sub> (m/s) (3)	d <sub>a</sub> (m) (4)	θ (5)	Φ (6)	K <sub>1</sub> (7)	D <sub>50</sub> (mm) (8)	SF (9)	S <sub>s</sub> (10)	C (11)	C <sub>P/A</sub> (12)	D <sub>50</sub> (mm) (13)	NOTES (14)

Design Sketch:      	<u>RIPRAP CHARACTERISTICS:</u> Size: _____ Thickness: _____ $D_{50}$ _____ $2D_{50}$ _____ Class _____ $D_{100}$ _____ AASHTO Use _____ Gradation: Size: _____ Percent (mm)      Finer _____ 100 _____ 50 _____ 5-10	<u>FABRIC CHARACTERISTICS:</u>  <table style="width: 100%;"> <tr> <td style="text-align: right;">Granular:</td> <td style="text-align: center;">Size (mm)</td> <td style="text-align: center;">Percent Finer</td> </tr> <tr> <td></td> <td style="text-align: center;">_____</td> <td style="text-align: center;">85</td> </tr> <tr> <td></td> <td style="text-align: center;">_____</td> <td style="text-align: center;">50</td> </tr> <tr> <td></td> <td style="text-align: center;">_____</td> <td style="text-align: center;">15</td> </tr> </table> Fabric: AOS < _____ Perm. > _____  Average Opening Size	Granular:	Size (mm)	Percent Finer		_____	85		_____	50		_____	15
Granular:	Size (mm)	Percent Finer												
	_____	85												
	_____	50												
	_____	15												

- |                                   |   |   |  |
|-----------------------------------|---|---|--|
| (1) Water surface elevation       | (5) Bank angle                            | (9) Stability factor                              | (12) Pier/abutment correction (3.38 if applicable)     |
| (2) Main channel flow area        | (6) Riprap angle of repose (Figure 38-6C) | (10) Riprap specific gravity                      | (13) Correction $D_{50} = (8) \times (11) \times (12)$ |
| (3) Main channel average velocity | (7) Bank angle correction (Figure 38-6B)  | (11) Riprap size correction factor (Figure 38-6E) | (14) Notes or comments                                 |
| (4) Main channel average depth    | (8) Riprap size (Figure 38-6A)            |   |  |

## RIPRAP SIZE PARTICLE EROSION

**Figure 38-6P**